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December 17, 1997

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

VIA HAND DELIVERY

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
1919 M Street, N.W.
Room 222
Washington, D.C. 20554

Re: Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service
MM Docket No. 87-268
Comments

Dear Ms. Salas:

We are transmitting herewith the original and five copies of the comments of Scripps Howard Broadcasting Company in the above-captioned proceeding. The comments are filed pursuant to the Commission's Public Notice of December 2, 1997. Please contact the undersigned if you have any questions.

Sincerely,

Donald Zeifang

Enclosures

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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the matter of	)	
	)	
FCC SEEKS COMMENTS ON FILINGS	)	MM Docket No. 87 - 268
ADDRESSING DIGITAL	)	
TV ALLOTMENTS, PUBLIC NOTICE	)	
dated December 2, 1997	)	

RECEIVED
DEC 17 1997
FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

TO: The Commission

COMMENTS SUBMITTED BY SCRIPPS HOWARD BROADCASTING COMPANY

These comments by Scripps Howard Broadcasting Company (SHBC) are in response to the PUBLIC NOTICE from the Federal Communications Commission (FCC) dated December 2, 1997 and signed by Richard M. Smith, Chief, Office of Engineering and Technology. Specifically, Mr. Smith requested comments be filed with the FCC by December 17, 1997 relative to the ex parte filing from the Association of Maximum Service Broadcasters, Inc. (MSTV) submitted November 20, 1997 which suggested 357 changes in the FCC DTV Table for the purpose of interference reduction and additionally the ex parte filing submitted November 25, 1997 by the Association of Local Television Stations (ALTV) which requests that all UHF DTV stations be permitted to increase power to one megawatt in order to reduce the power disparity between the UHF DTV assignments.

SHBC is the licensee of six VHF stations and three UHF stations and operates one additional UHF as an LMA.

CONCERNING THE MSTV FILING

The purpose of the MSTV filing, as understood by SHBC, is to reduce the potential for interference to DTV and NTSC stations in several geographic areas, and for that reason would be in the public interest. SHBC does not have the means, in the short reply time period, to check the FCC DTV Table, with and without the MSTV example of 357 potential channel changes. Under the circumstances, SHBC must depend on the FCC and MSTV to develop improvements to the DTV Table. From the PUBLIC NOTICE:

> "With regard to MSTV's filing, we seek comment on whether the issues raised by MSTV are more appropriately handled on an individual case-by-case basis or through a new Table"

In summary, considering the number of potential changes, and the "domino" affect, it would **not** be reasonable to believe the potential channel changes could be made on a case-by-case basis in a reasonable time period. It would seem that a new FCC Table could be realized in a much shorter time period and not delay or burden the process.

CONCERNING THE ALTV FILING

From the PUBLIC NOTICE:

> "With regard to the ALTV filing, we request comment on how an antenna beam tilt approach would relate to other solutions for resolving the UHF power problem"

From the beginning of the DTV process, and the earliest FCC and MSTV tables, SHBC has been concerned by the general signal disparity between the VHF station's UHF DTV granted power and the UHF station's granted UHF DTV power. In many markets there would be a 13 dB power difference between the UHF DTV stations, when such a UHF power disparity does not now exist in the NTSC arena. For example consider a UHF NTSC station and a VHF NTSC station now operating at 1,000 feet in the same market. One million UHF DTV Watts would be assigned for the NTSC VHF station, and 50,000

UHF DTV Watts for the one million Watt NTSC UHF station. Without knowing the results of the in-home DTV reception, we are concerned that a 13 dB signal disparity could easily make a 50,000 Watt UHF DTV station "invisible" to the potential viewer. For this reason, SHBC supports power assignments higher than 50,000 Watts for UHF DTV and suggested in an earlier filing a UHF DTV power in the order of 300,000 Watts.

(See SHBC Reply Comments dated January 20, 1997, to the 6th Further Notice of Proposed Rule Making MM Docket 87-268)

However, SHBC does not support the ALTV proposal for one million Watts (1,000kW) for all UHF DTV stations and the use of antenna beam tilt for the purpose of not increasing the power at the "original protected contour". The ALTV proposal as offered is problematic. The first consideration is that the power differential between UHF stations could become even worse than now possible under the presently proposed FCC Table.

We have used two examples with the understanding that there are a myriad of antenna patterns, beam tilts, and gains that are potentially available to use in such examples. We consider here, that in order to not increase the power at the "protected contour", the power level at he radio horizon must be kept at or below 50,000 Watts (50kW).

EXAMPLE #1:

We have used a typical DTV UHF antenna pattern (chart #1) and a table of distance in miles vs. depression angle (chart #2) for this example.

Station **a** = 1,000kW = 60dBW	20 log x = -13 dB (to determine relative field)
Station **b** = 50kW= <u>47dBW</u>	x = 0.224 relative field
13 dB difference	

Thus 13 dB is the difference between station **a** & **b** which is to be resolved with a power increase and beam tilt for station **b.**

From Chart #1: point A, determine -1.15°, which added to 0.5° beam tilt = 1.65°

From Chart #2: use 6.9 miles, 1.6° (rounded) depression angle so that only 50kW seems to appear at the horizon (0.224 relative field).

Now consider the field strength for 1,000kW with 1.6° beam tilt 6.94 miles from the antenna vs. 1,000kW with 0.5° beam tilt aimed at the horizon; from Chart # 1:

Relative field of 1,000kW with 0.5° beam tilt at 6.94 miles is 0.65 = -3.7 dB (Chart #1 point C)

Thus 1,000kW for station **b** (the 50 kW at horizon UHF facility) with 1.6° beam tilt is 3.7dB higher than the 1,000kW station **b** with 0.5° beam tilt. This reverses the predicted signal level situation between a 50kW (-13 dB) and a 1,000kW station with the same beam tilt.

EXAMPLE #2:

Consider a 2.5° depression angle for stations **a** and **b.**. With a 2.5° depression angle the distance from the 1,000 foot center of radiation is 4.38 miles. The relative field would be 0.25 or -12dB for station **a.**

For station **b** at 2.5° (2.5-1.6=0.9), from chart #1, 0.9° off peak power is 0.66 relative field or -3.6 dB. Thus station **b** (the former 50kW station, would be 8.4dB higher than station **a**, again reversing the original concern with the further potential to cause adjacent channel interference.

In addition to the signal level differences, which would occur over a very large area,

consider also:

- The higher than expected close-in signal levels (perhaps blanketing) with 1,000kW and a large beam tilt and the affect on existing NTSC reception and the yet to be defined DTV reception.
- What effect the reflections from the higher "close-in" field strength levels would have on DTV and NTSC reception.
- The relative field above the horizon often rises as antenna beam tilt is increased. (1.6dB above 50kW at 2.4° above the horizon for the example

antenna point B, Chart #1) Would higher than desired radiation levels above the radio horizon cause interference concerns beyond the radio horizon?

- Any tower/antenna movement which would shift the radiation pattern making interference patterns random in nature and potentially cause random interference to reception.

Perhaps the most unacceptable part of the ALTV proposal is the suggestion that any station receiving interference must prove interference before the offending station would need to consider corrections. The FCC would provide the final resolution after arbitration. This process would overburden the FCC, cause needless cost and effort to the stations receiving interference and compromise NTSC and DTV service to the public. Interference resolution, as described by ALTV, is impractical and essentially unworkable.

Reasonable combinations of beam tilt and antenna gain, have benefited the NTSC viewer as sometimes engineered for NTSC. The use of reasonable beam tilt and power for DTV, could similarly be of benefit to the public by providing a DTV power ratio balance.

In summary, the ALTV proposal as presented is unacceptable to SHBC for all of the reasons given above.

Warren Happel

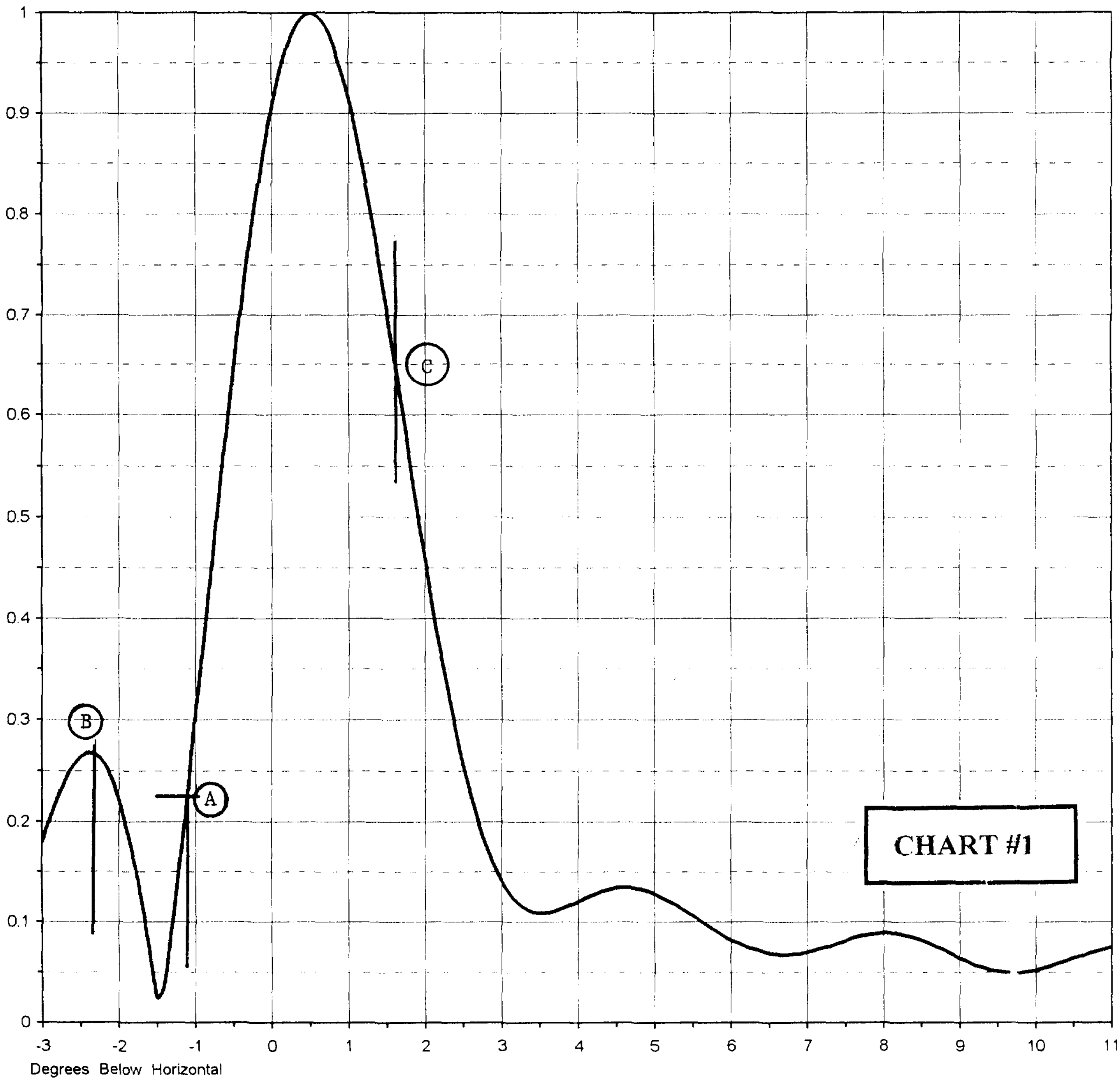
Warren Happel
Vice President Engineering
Scripps Howard Broadcasting Company
December 15, 1997

DIELECTRIC COMMUNICATIONS
A UNIT OF GENERAL SIGNAL

Proposal Number	DCA-7687	Revision:	1
Date	19-Aug-97		
Call Letters	WXYZ-DT	Channel	41
Location	Detroit, MI		
Customer			
Antenna Type	TFU-30DSC-R O3		

ELEVATION PATTERN

RMS Gain at Main Lobe	25.0	(13.98 dB)	Beam Tilt	0.50 deg
RMS Gain at Horizontal	20.6	(13.14 dB)	Frequency	635.00 MHz
Calculated / Measured	Calculated		Drawing #	30Q250050



DISTANCE IN MILES VS. DEPRESSION ANGLE FOR VARIOUS ANTENNA HEIGHTS*

Height, ft	Horizon		Depression angle, deg																															
	mi	deg	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.2	1.4	1.6	1.8	2.0	2.5	3.0	3.5	4.0	4.5	5.0	6.0	7.0	8.0	9.0	10.0	12.0	14.0	16.0	18.0	20.0	25.0
100	14.14	0.15	...	6.61	3.89	2.82	2.22	1.84	1.57	1.37	1.21	1.09	0.91																					
200	20.00	0.22	...	...	8.56	5.90	4.57	3.74	3.18	2.76	2.45	2.20	1.82	1.56	1.36	1.21	1.09	0.87																
300	24.49	0.27	...	...	14.83	9.32	7.05	5.72	4.83	4.19	3.70	3.31	2.75	2.35	2.05	1.82	1.63	1.31	1.09	0.93														
400	28.28	0.31	...	...	...	13.22	9.70	7.78	6.53	5.64	4.97	4.45	3.68	3.14	2.74	2.43	2.18	1.74	1.45	1.24	1.09	0.96												
500	31.62	0.34	...	...	...	17.92	12.56	9.94	8.28	7.13	6.26	5.60	4.62	3.93	3.43	3.04	2.73	2.18	1.81	1.55	1.36	1.21	1.08	0.98										
600	34.64	0.38	...	...	...	24.26	15.69	12.20	10.09	8.64	7.58	6.76	5.56	4.74	4.13	3.66	3.28	2.62	2.18	1.86	1.63	1.45	1.30	1.08	0.93									
700	37.42	0.41	...	...	...	...	19.19	14.58	11.96	10.20	8.92	7.94	6.52	5.54	4.83	4.27	3.84	3.06	2.54	2.17	1.90	1.69	1.52	1.26	1.08	0.94								
800	40.00	0.43	...	...	...	...	23.21	17.12	13.90	11.79	10.28	9.13	7.49	6.36	5.53	4.89	4.39	3.50	2.91	2.49	2.17	1.93	1.74	1.44	1.24	1.08	0.96							
900	42.43	0.46	...	...	...	...	28.10	19.83	15.91	13.43	11.67	10.35	8.46	7.17	6.23	5.52	4.95	3.94	3.27	2.80	2.45	2.17	1.95	1.62	1.39	1.21	1.08	0.97						
1000	44.72	0.49	...	...	...	...	34.98	22.78	18.02	15.11	13.09	11.58	9.44	8.00	6.94	6.14	5.51	4.38	3.64	3.11	2.72	2.41	2.17	1.80	1.54	1.35	1.20	1.07	0.89					
1100	46.90	0.51	...	...	...	...	...	26.01	20.22	16.84	14.54	12.83	10.44	8.83	7.66	6.77	6.07	4.82	4.00	3.42	2.99	2.66	2.39	1.99	1.70	1.48	1.32	1.18	0.98					
1200	48.99	0.53	...	...	...	...	...	29.65	22.54	18.63	16.01	14.10	11.44	9.66	8.37	7.40	6.63	5.27	4.37	3.74	3.26	2.90	2.61	2.17	1.85	1.62	1.44	1.29	1.07	0.91				
1300	50.99	0.55	...	...	...	...	...	33.91	24.99	20.48	17.52	15.39	12.46	10.50	9.10	8.03	7.19	5.71	4.74	4.05	3.54	3.14	2.82	2.35	2.01	1.75	1.56	1.40	1.16	0.99				
1400	52.91	0.57	...	...	...	...	...	39.25	27.61	22.39	19.07	16.70	13.48	11.35	9.82	8.66	7.76	6.16	5.11	4.36	3.81	3.38	3.04	2.53	2.16	1.89	1.68	1.51	1.25	1.06	0.92			
1500	54.77	0.59	...	...	...	...	...	47.72	30.43	24.37	20.66	18.04	14.51	12.20	10.55	9.30	8.32	6.60	5.48	4.68	4.09	3.63	3.26	2.71	2.32	2.02	1.80	1.61	1.34	1.14	0.99			
1600	56.57	0.61	...	...	...	...	...	...	33.50	26.44	22.28	19.40	15.56	13.06	11.28	9.94	8.89	7.05	5.84	4.99	4.36	3.87	3.48	2.89	2.47	2.16	1.92	1.72	1.43	1.22	1.06	0.93		
1700	58.31	0.63	...	...	...	...	...	...	36.91	28.61	23.95	20.79	16.62	13.93	12.02	10.58	9.46	7.50	6.21	5.31	4.63	4.11	3.70	3.07	2.63	2.29	2.04	1.83	1.52	1.29	1.12	0.99		
1800	60.00	0.65	...	...	...	...	...	...	40.81	30.88	25.68	22.21	17.69	14.80	12.76	11.23	10.04	7.94	6.58	5.62	4.91	4.35	3.91	3.25	2.78	2.43	2.15	1.94	1.61	1.37	1.19	1.05	0.94	
1900	61.64	0.67	...	...	...	...	...	...	45.50	33.28	27.45	23.65	18.77	15.68	13.50	11.88	10.61	8.39	6.95	5.94	5.18	4.60	4.13	3.43	2.94	2.56	2.28	2.04	1.69	1.44	1.26	1.11	0.99	
2000	63.24	0.69	...	...	...	...	...	...	51.80	35.84	29.28	25.13	19.87	16.56	14.25	12.53	11.19	8.85	7.32	6.25	5.46	4.84	4.35	3.62	3.09	2.70	2.39	2.15	1.78	1.52	1.32	1.17	1.04	0.81
2500	70.71	0.77	...	...	...	...	...	...	...	52.86	39.59	33.05	25.56	21.10	18.06	15.82	14.10	11.11	9.19	7.84	6.83	6.06	5.44	4.52	3.87	3.38	2.99	2.69	2.23	1.90	1.65	1.46	1.30	1.02
3000	77.46	0.84	...	...	...	...	...	...	...	...	53.28	42.22	31.65	25.83	21.98	19.19	17.06	13.40	11.06	9.43	8.22	7.28	6.54	5.43	4.64	4.05	3.59	3.23	2.68	2.28	1.98	1.75	1.56	1.22
3500	83.66	0.91	...	...	...	...	...	...	...	...	...	53.51	38.27	30.80	26.03	22.64	20.08	15.72	12.95	11.03	9.60	8.51	7.64	6.34	5.42	4.73	4.20	3.77	3.12	2.66	2.31	2.04	1.82	1.42
4000	89.44	0.97	...	...	...	...	...	...	...	...	...	69.94	45.54	36.03	30.22	26.17	23.15	18.06	14.85	12.63	11.00	9.74	8.74	7.26	6.20	5.41	4.80	4.31	3.57	3.04	2.64	2.33	2.08	1.63
4500	94.86	1.03	...	...	...	...	...	...	...	...	...	...	53.75	41.57	34.56	29.79	26.28	20.43	16.77	14.25	12.40	10.97	9.85	8.17	6.98	6.09	5.40	4.85	4.02	3.42	2.98	2.63	2.34	1.83
5000	99.99	1.09	...	...	...	...	...	...	...	...	...	...	63.35	47.49	39.08	33.52	29.47	22.82	18.70	15.87	13.80	12.21	10.95	9.08	7.76	6.77	6.00	5.39	4.46	3.80	3.31	2.92	2.60	2.03

*Distances beyond the horizon and below 1 mile (1.6 km) are not indicated.

CHART #2